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## Necessary, Unnecessary and Sufficient Conditions

**M.A.R., Biggs**

University of Hertfordshire, Hatfield, Herts, United Kingdom

m.a.biggs@herts.ac.uk

It is the claim of this paper that the judgement and classification of a work as research is a judgement that is made by the audience and is an issue of its reception, rather than being determined by the intention of the “author”. This is because a work must meet a few basic conditions in order to function as research, and these are centred on issues of communication and audience. While the researcher must purposefully position the work, its reception depends upon it meeting these conditions in the opinion of peers. In recent years there has been much debate about these conditions, and in previous papers I have developed arguments from the practical need to acknowledge the conditions set by research funding agencies on researchers. However, more recent papers have moved the argument from production issues concerning the instrumentality of language (Biggs 2002), through issues of the affect of context on interpretation (Biggs 2003), to the role of the audience in determining what constitutes a meaningful question that needs to be addressed, what would constitute a meaningful response to such questions and therefore the methods that would robustly connect one to the other (Biggs 2005). The present paper is a further contribution to the development of an ontology of research based on first principles and it identifies three necessary and sufficient conditions for a work to be research, and contrasts them with one often cited condition that appears to be unnecessary: authorial intention. The necessary and sufficient conditions are dissemination, originality and context. Other requirements such as the identification of an explicit question are regarded as consequences of these conditions.

Research must be disseminated. Why? Because research must influence the actions of other practitioners in the field. This is what we mean by advancing knowledge or its interpretation. An advance is made by one researcher and disseminated to others so that they benefit from that person’s work. Accounting for his accomplishments Newton said “If I have seen further it is by standing on ye shoulders of Giants.” (Newton to Hooke, 5 Feb. 1676). The opposite condition to dissemination would be a field in which everyone originated knowledge for themselves. This would involve everyone “reinventing the wheel”. While this would be high in originality in the sense of lots of origination (cf. next condition), it would be low in effectiveness. Research is a process that should make knowledge generation more efficient. By sharing knowledge about the invention of wheels or their uses, we allow the creative energies of co-researchers to be applied to more advanced topics. Research is a cumulative process even if one rejects the [Modernist] notion of it being progressive.



There are some other inferences that we can draw from this necessity to disseminate research. Dissemination involves communicating with the audience for research. While there is no guarantee that the audience will see and understand the research, it is clearly more probable that the research will impact on the audience if it is communicated through an effective channel. This is why high impact journals are regarded more highly than low impact journals: because of the increased probability of research published in high impact journals reaching the intended audience. The same applies to exhibitions. If we put to one side the question of what role artefacts have in research, we can see that if artefacts have a role in research, then disseminating them through high profile venues such as Tate Modern will be more likely to reach the intended audience than dissemination through low profile venues such as the local library. The intended audience is firstly the community of researchers in the field, because by sharing knowledge and its interpretation with them we can maximise the development of the field by diverting energies away from reinventing wheels. The audience also includes other practicing professionals, the interested public, etc.

The second of the necessary and sufficient conditions is originality. Research must result in something original that was not known or interpreted in this way before. This knowledge must be new for the audience and not just new for the researcher. Although it is common to use the term “research” to describe what undergraduates do when they visit exhibitions or go to the library in order to find out about a subject, research in the terms of a conference such as this means making a claim to new knowledge or interpretation that nobody has hitherto known. I describe this difference as that between trivial originality and consequential originality.

We can draw several inferences from this. It is part of the task of the researcher to demonstrate that this knowledge is new. This is undertaken by what is known in doctoral studies as the literature search, which of course includes searching all kinds of media appropriate to the subject. If this is done thoroughly and systematically it is possible to undertake a gap analysis with which one can substantiate the claim that the knowledge or interpretation in the research has not been claimed by anyone previously. This is the definition of originality. Of course, this process cannot account for knowledge which is known by somebody but is not made public. This returns us to the duty of dissemination. Knowledge that is held by one person and not disseminated is not recognised by anybody else and if somebody else publishes this knowledge the attribution of intellectual property goes to the researcher who makes the first public claim to the knowledge rather than to the one who first thought it. This, famously, was the problem between Newton and Leibniz over who originated the idea of the calculus.

The third of my conditions is context. Research must be contextualised. Why? Because by placing the outcome in a critical context the researcher not only contributes to the argument in defence of originality but also makes clear the way in which the knowledge develops or departs from existing modes of understanding. This explains the use of the knowledge: the interpretation of what has been claimed. Other researchers may find alternative uses or interpretations of the knowledge and this would constitute new claims to originality.



Whether a work is a work of research is therefore a judgement about whether it meets these three conditions. But one question is: a judgement by whom? To what extent is research produced by an intentional act on the part of the researcher, and to what extent is work received by an audience who understands it and recognizes its original contribution, and who therefore should change their actions in response to it?

For appropriate reception by the audience we have seen that the work must be disseminated. Dissemination means not only putting the work out into the world, but doing so in a targeted way, so that it has a high probability of reaching an audience for whom this contribution will be consequential. So dissemination already ties the researcher to the audience by assuming that they share the communication channel through which the work is disseminated, e.g. the journal or the exhibition. To some extent we can see that for this to be effective there needs to be intentionality on the part of the researcher.

We can also attribute intentionality to the audience, especially if the communication channel is labelled as a research channel, e.g. a research journal or a research exhibition. This suggests that the audience is open to being impacted by new knowledge. Hence the audience is potentially different from the audience for art-as-culture, design-as-consumption, music-as-recreation, architecture-as-habitation, etc. We have already seen that originality can be problematic. Originality is not solely novelty, but something that is a new and consequential development not just for the researcher but also for the audience. Originality needs to be recognised for its novelty and for its consequentiality. Originality is therefore closely linked to the third condition of contextualisation. The audience will only recognize the novelty of the work if they are familiar with, or presented with, a context in which its novelty becomes apparent. For originality to be recognized above and beyond novelty for the experiencing individual, requires an experienced individual. This role is often given to the critic who is professionally exposed to a greater number of works than most other members of the audience, and we may defer the confirmation of originality to the critical reviewer. The consequences of the originality, i.e. the consequences that we see in research, need to be unpacked by the researcher. This involves both the linkage to previous work, the gap analysis of previous work, and the argument for the benefits and consequences and impact of the present work. This argument is purposefully put forward by the researcher, and it is a matter of the critical response of the audience whether this argument is accepted as valid.

In meeting these three necessary conditions there is clearly an intention required on the part of the researcher: the intention to disseminate, the intention to claim consequential originality, and the intention to contextualize and argue for that claim. Thus we can conclude that intention is desirable on the part of the researcher in order to claim a work as research. But this intention is matter of positioning. These actions are prerequisites for the judgements that constitute the classification of the work as research. It is the audience who makes the judgement as to whether these arguments and claims have been successful and therefore the researcher's intention is an unnecessary condition of that judgement. It is the audience that contains the practitioners and co-workers in the field whose practice will be impacted by the work if it is received as both original and consequential. It is the audience who will refer to the work and attribute intellectual ownership of the ideas to the researcher. On this basis we can see that the judgement of the audience is more important in the classification of a work as research than the mere intentions of the researcher. Indeed, if the researcher does not intend to present the work as research it may nonetheless be received as such. For example, although



Picasso denied that his work was research, this does not seem to me to preclude subsequent generations evaluating his contribution as a research contribution.

In conclusion, this paper claims that whether a work is classified as research is a matter of judgement. This judgement is made by the audience and is evidenced by a change in their practice and by the attribution of that change to the researcher's work through referencing and the acknowledgement of intellectual property. The contribution made by this paper is to identify that there are three necessary and sufficient conditions for such a judgement. These are that it be appropriately disseminated, contextualised, and have consequential originality. To achieve these conditions it is desirable, but neither necessary nor sufficient, for the researcher to have the intention that the work be classified as research. If the former three conditions are met then it is irrelevant whether the "author" intends the work to be research. It is therefore a further outcome of this paper that the judgement and classification of a work as research is an issue of reception, and the role of intention at the point of production is relevant only in increasing the likelihood that the conditions will be met for that reception.

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